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TOPICAL DISCUSSION

SERVICE PIPES

Experience with various materials, particularly steel or iron ungalvanized. Reasons for using iron or steel instead of lead; experience with material other than iron, steel or lead.

Mr. A. A. Reimer: The speaker refrained from going on with that matter this morning because in that discussion certain remarks were made that did not seem to apply to the question particularly before the convention; but certain things were said this morning which the speaker wishes to reply to. Mr. Wilcox stated, or the practical effect of his statement was that there was nobody making wrought iron pipe today. Now the speaker's investigations in connection with the committee work for the Association have led him into several of the shops and foundries of the country; and he wishes definitely and positively to say that there are concerns making genuine wrought iron pipe. It will not do to give the name of any particular concern, of course, before the convention, we are not here for that particular purpose; but if any of you are interested in getting wrought iron pipe, that you will not have any bother with in using or testing it after you receive it, the speaker can tell you where you can get it and how you can specify it so that you will be sure to get genuine wrought iron pipe. You do not have to take steel pipe if you want wrought iron pipe, you can get wrought iron pipe and you can feel sure that you do get it. The speaker has specified a certain brand of pipe and received it with the maker's name marked on it.

Mr. W. F. Wilcox: The gentleman misunderstood the speaker, who did not state that there was no wrought iron pipe to be gotten. He said he seriously doubted if there was enough wrought iron pipe to furnish everybody with it without putting them to considerable expense. It would seem that there are a great many engineers who undertake to lay a burden on the manufacturer which increases the cost of the work without there being any corresponding advantage in so doing. Low carbon ingot steel will answer all the purposes of wrought iron pipe. The speaker does not remember the price, not being interested enough. He thinks in the majority of cases low carbon steel will be just as satisfactory wherever a man's local conditions do not warrant him in paying any extra amount or going to any extra trouble to get wrought iron; it is doubtful if anything is gained by going out of the way to get wrought iron. Hundreds of thousands of dollars have been paid out to test the comparative life of steel and iron. To go into the slightest discussion of that would bore the convention, and so the speaker will not undertake it, but he believes that any man in any city will do well to consider his own particular conditions.

Mr. W. R. Conard: Anyone who is using wrought iron or steel pipe can make a very simple test to determine whether they are getting wrought iron or steel pipe. Take one part of sulphuric acid to three parts water and immerse a short section of the pipe in the solution for six or eight hours. This will demonstrate very quickly whether it is iron, or steel, not positively always, but generally speaking, and quite conclusively. When you take the short section of pipe from the bath the pitting of the metal will show a more or less granular structure if it is steel; if it is wrought iron you will find a fibrous appearance. It does not take so very long to make the test, and you can demonstrate to your own satisfaction in that length of time just whether it is iron, or steel.

Mr. W. J. Haddow: You may profit by the experience of the machinist and arrive at the same conclusion in about two minutes with a hammer and chisel. The grain of the iron is arranged longitudinally; steel, as the previous speaker has said, shows little granular particles.

Mr. C. W. Wiles: Any man who cuts pipe or goes into a shop and puts a piece of pipe into the cutter can tell very quick whether it is steel or iron. Another method of test is by the use of a threading machine on a piece of pipe; the wrought iron will take a sharp, smooth thread. Wrought iron cuts and threads more easily than steel, and wears the cutting and threading tools less.

Mr. Raymond W. Parlin: The last speaker referred to something which has interested the speaker for some time. He has often been told that even though genuine wrought iron pipe were specified it was very doubtful whether it would be received. Our foremen have often said that the pipe purchased in recent years was not as good as that which we used to get and their statements were borne out by the experience which two plants with which the speaker has been connected have had with its use. The old pipe lasted eighteen to twenty-two years while the newer pipe on nearby services went to pieces in from twelve to fifteen years. The speaker has several times noticed that the threads made by the dies on the newer pipe were not as smooth or as easily cut as those on the old pipe. This led him to believe that the metal in the newer pipe was a mild steel instead of wrought iron. Wherever trouble is experienced with internal corrosion of service pipes, and no corrosion takes place on the outside, it would seem that ordinary steel pipe lined with natural cement would be preferable to the wrought iron pipe generally supplied. Experience in Watertown, Massachusetts, and in several other New England towns indicates that this pipe will be practically as good at the end of fifteen or twenty years as when it was put in place, while the best wrought iron pipe often fills with rust within a few years. Such pipe can be purchased in quantity and lined by the repair forces when there is nothing else to do. The cost should not be more than that of the best quality galvanized wrought iron pipe.

Mr. A. A. Reimer: Another interesting test can be made by those who have machine shops, you can make it very easily, take a piece of steel pipe and then get a piece of wrought iron pipe, and make sure that it is wrought iron pipe. Put the pipes on an emery wheel and you can see the difference in the sparks that are produced in the case of the wrought iron as compared with the steel. You will be surprised at the difference you get in those sparks. That is about the simplest test that you can work with for a quick test. You will never be fooled, because low carbon steel cannot possibly make the same kind of sparks that the wrought iron pipe will. That is one of the most positive tests that have been found up to the present time. In our committee work, this is one of the points that we brought up in connection with wrought iron and steel, and after you have seen the sparks once you can never be fooled.

Mr. J. M. Diven: Let us hope that, when the committee makes its final report, there will be a recommendation that the manufacturers will follow, that every pipe be stamped, so that we will know who made it. As to the small demand for wrought iron pipe and the prices paid, no doubt the demand will be met by the manufacturers.

The speaker's experience in buying old-time pipe in the open market, as against the present steel pipe, is, that the old-time pipe would last about double the time of the new. We were sure that it was wrought iron pipe, because there was no steel pipe made then. We do know that there are certain manufacturers that do not make anything but wrought iron pipe. You are safe in buying from them; but in buying from the dealers you cannot be sure what kind of pipe you are getting unless there is a requirement that the name of the manufacturer be stamped on every length of pipe.

Mr. R. J. Thomas: We are using mostly wrought iron pipe for large services and driving wells, and have never had any difficulty in getting all we want. In buying, we specify that no pipe will be accepted unless every length is branded. The speaker is surprised to hear of any difficulty in obtaining wrought iron pipe. We buy a carload at a time. Of course the price is higher than for steel pipe but it will last longer and wear better. Occasionally we have tried steel pipe but it has not proved as satisfactory as the iron. From our experience, confirmed by the experience of others, as found in papers read here, and from those who have made tests for a length of time of wrought iron pipe, it has proven satisfactory. In regard to services for inch pipe and $\frac{3}{4}$ inch pipe we use lead lined iron pipe.

CARE OF VALVES

Packing and material used for packing; Lasting qualities of various packings; Setting of valves to permit packing without digging up the streets; Oiling valves, both stuffing boxes and gears.

Mr. M. L. Worrell: In regard to material used for packing valves, the most satisfactory one, one that has you may say life everlasting, is lead wool. Once you pack a valve properly with lead wool, your job will stand forever, something else will have to give way before it does.

Mr. William Luscombe: Will the speaker please tell how many years he has used lead wool for packing valves?